

ABSTRACT OF THE INVENTION

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A linear ramp generating and control circuit finding particular applicability in a time interval measurement system. The linear ramp circuit includes a hold capacitor which may be linearly discharged during one operating mode of the circuit by coupling a constant current source to the capacitor. The voltage on the hold capacitor is linearly discharged away from a baseline voltage level to a data voltage level which is subsequently passed to an analog-to-digital converter of the time interval measurement system for further processing. The hold capacitor voltage is returned to the baseline voltage level during a recovery mode of circuit operation by a recovery or recharge network. The recharge network may include an active-feedback circuit which implements an approximately second-order voltage response to the hold capacitor during the recovery mode of operation. The circuit may also include a composite amplifier for buffering the hold capacitor voltage level to a circuit output during a hold mode of circuit operation. The effect of this invention is that the errors such as drift, signal noise, and baseline voltage instability can be minimized.

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